

IN THE CLAIMS:

32. (Original) A reactant formulation comprising a polycycloolefin monomer and a Group 10 transition metal procatalyst wherein said polycycloolefin monomer comprises a multifunctional polycycloolefin containing at least two polymerizable norbornene-type moieties.

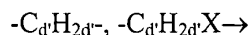
33. (Currently Amended) The reactant composition of claim 32 wherein said procatalyst is selected from a compound of the formula:



wherein M represents a Group 10 transition metal; R' represents hydrogen or an anionic hydrocarbyl ligand; L' represents a Group 15 neutral electron donor ligand; A' is an anionic leaving group; x is 1 or 2.

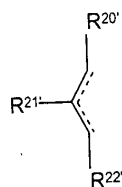
34. (Original) The reactant composition of claim 33 wherein M is selected from the group consisting of nickel, palladium, and platinum.

35. (Original) The reactant composition of claim 33 wherein R' is selected from the group consisting of hydrogen; linear and branched C₁-C₂₀ alkyl; linear and branched C₂-C₂₀ alkenyl; allylic ligands and canonical forms thereof; substituted and unsubstituted C₅-C₁₀ cycloalkyl; substituted and unsubstituted C₆-C₁₅ cycloalkenyl; substituted and unsubstituted C₇-C₃₀ aralkyl; substituted and unsubstituted, C₆-C₃₀ aryl; C₆-C₃₀ heteroatom containing aryl; wherein said heteroatom is selected from the group consisting of sulfur, oxygen, nitrogen, phosphorus, wherein the substituents in said substituted radicals are selected from the group consisting of linear or branched C₁-C₅ alkyl, linear or branched C₁-C₅ haloalkyl, linear or branched C₂-C₅ alkenyl, haloalkenyl, halogen, and phenyl optionally substituted with linear or branched C₁-C₅ alkyl, linear or branched C₁-C₅ haloalkyl, and halogen; and a hydrocarbyl containing ligand selected from the formulae:



each of said ligands together with the Group 10 metal form a metallacycle or heteroatom containing metallacycle, wherein d' represents an integer from 3 to 10, and X→ represents an alkenyl or heteroatom containing moiety that coordinates to the Group 10 metal center.

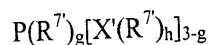
36. (Original) The reactant composition of claim 35 wherein said allylic ligand is represented by the formula:



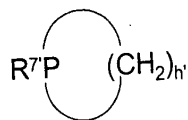
wherein $R^{20'}$, $R^{21'}$, and $R^{22'}$ each independently represent hydrogen, halogen, linear and branched C_1 - C_5 alkyl, C_5 - C_{10} cycloalkyl, linear and branched C_1 - C_5 alkenyl, C_6 - C_{30} aryl, and C_7 - C_{30} aralkyl, each of the foregoing radicals optionally substituted with a substituent selected from linear and branched C_1 - C_5 alkyl, linear and branched C_1 - C_5 haloalkyl, halogen, and phenyl which can optionally be substituted with linear and branched C_1 - C_5 alkyl, linear and branched C_1 - C_5 haloalkyl, and halogen; any two of $R^{20'}$, $R^{21'}$, and $R^{22'}$ can be linked together with the carbon atoms to which they are attached to form a cyclic or multicyclic ring, each optionally substituted with linear or branched C_1 - C_5 alkyl, linear or branched C_1 - C_5 haloalkyl, and halogen.

37. (Original) The reactant composition of claim 33 wherein said group 15 electron donor ligand is selected from the group consisting of amines, pyridines, arsines, stibines and organophosphorus containing compounds.

38. (Original) The reactant composition of claim 37 wherein said organophosphorus containing ligand is selected from a compound of the formula:



wherein X' is oxygen, sulfur, nitrogen, or silicon; g is 0, 1, 2, or 3; h is 1, 2, or 3, with the proviso that when X' is a silicon atom, h is 3, when X' is an oxygen or sulfur atom h is 1, and when X' is a nitrogen atom, h is 2; R^{7'} is independently selected from hydrogen, linear and branched C₁-C₁₀ alkyl, C₅-C₁₀ cycloalkyl, linear and branched C₁-C₁₀ alkoxy, allyl, linear and branched C₂-C₁₀ alkenyl, C₆-C₁₂ aryl, C₆-C₁₂ aryloxy, C₆-C₁₂ arylsulfides, C₇-C₁₈ aralkyl, cyclic ethers and thioethers, tri(linear and branched C₁-C₁₀ alkyl)silyl, tri(C₆-C₁₂ aryl)silyl, tri(linear and branched C₁-C₁₀ alkoxy)silyl, triaryloxysilyl, tri(linear and branched C₁-C₁₀ alkyl)siloxy, and tri(C₆-C₁₂ aryl)siloxy, wherein each of the foregoing substituents can be optionally substituted with linear or branched C₁-C₅ alkyl, linear or branched C₁-C₅ haloalkyl, C₁-C₅ alkoxy, halogen, and combinations thereof; when g is 0 and X' is oxygen, any two or 3 of R^{7'} can be taken together with the oxygen atoms to which they are attached to form a cyclic moiety; when g is 3 any two of R^{7'} can be taken together with the phosphorus atom to which they are attached to represent a phosphacycle of the formula:



wherein R^{7'} is as previously defined and h' is an integer from 4 to 11.

39. (Original) The reactant composition of claim 38 wherein g is 3 and R^{7'} is independently selected from the group consisting of hydrogen, linear and branched C₁-C₁₀ alkyl, C₅-C₁₀ cycloalkyl, linear and branched C₁-C₁₀ alkoxy, allyl, linear and branched C₂-C₁₀ alkenyl, C₆-C₁₂ aryl, and C₆-C₁₂ aryloxy.

40. (Original) The reactant composition of claim 37 wherein said organophosphorus containing ligand is a phosphine selected from the group consisting of trimethylphosphine, triethylphosphine, tri-n-propylphosphine, triisopropylphosphine, tri-n-butylphosphine, tri-sec-butylphosphine, tri-i-butylphosphine, tri-t-butylphosphine, tricyclopentylphosphine, triallylphosphine, tricyclohexylphosphine, triphenylphosphine, trinaphthylphosphine, tri-p-tolylphosphine, tri-o-tolylphosphine, tri-m-tolylphosphine, tribenzylphosphine,

tri(*p*-trifluoromethylphenyl)phosphine, tris(trifluoromethyl)phosphine, tri(*p*-fluorophenyl)phosphine, tri(*p*-trifluoromethylphenyl)phosphine, allyldiphenylphosphine, benzylidiphenylphosphine, bis(2-furyl)phosphine, bis(4-methoxyphenyl)phenylphosphine, bis(4-methylphenyl)phosphine, bis(3,5-bis(trifluoromethyl)phenyl)phosphine, *t*-butylbis(trimethylsilyl)phosphine, *t*-butyldiphenylphosphine, cyclohexyldiphenylphosphine, diallylphenylphosphine, dibenzylphosphine, dibutylphenylphosphine, dibutylphosphine, di-*t*-butylphosphine, dicyclohexylphosphine, diethylphenylphosphine, di-*i*-butylphosphine, dimethylphenylphosphine, dimethyl(trimethylsilyl)phosphine, diphenylphosphine, diphenylpropylphosphine, diphenyl(*p*-tolyl)phosphine, diphenyl(trimethylsilyl)phosphine, diphenylvinylphosphine, divinylphenylphosphine, ethyldiphenylphosphine, (2-methoxyphenyl)methylphenylphosphine, tri-*n*-octylphosphine, tris(3,5-bis(trifluoromethyl)phenyl)phosphine, tris(3-chlorophenyl)phosphine, tris(4-chlorophenyl)phosphine, tris(2,6-dimethoxyphenyl)phosphine, tris(3-fluorophenyl)phosphine, tris(2-furyl)phosphine, tris(2-methoxyphenyl)phosphine, tris(3-methoxyphenyl)phosphine, tris(4-methoxyphenyl)phosphine, tris(3-methoxypropyl)phosphine, tris(2-thienyl)phosphine, tris(2,4,6-trimethylphenyl)phosphine, tris(trimethylsilyl)phosphine, isopropyldiphenylphosphine, dicyclohexylphenylphosphine, (+)-neomenthyldiphenylphosphine, tribenzylphosphine, diphenyl(2-methoxyphenyl)phosphine, diphenyl(pentafluorophenyl)phosphine, bis(pentafluorophenyl)phenylphosphine, and tris(pentafluorophenyl)phosphine.

41. (Currently Amended) The reactant composition of claim 33 44 wherein said labile neutral electron donor ligand is selected from the group consisting of DMF, DMSO, cyclooctadiene, water, chlorinated alkanes, alcohols, ethers, ketones, nitriles, arenes, phosphine oxides, organic carbonates and esters.

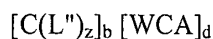
42. (Currently Amended) The ~~method~~ reactant composition of claim 33 wherein said anionic leaving group is selected from the group consisting of halogen, nitrate, triflate, triflimide trifluoroacetate, tosylate, AlBr_4^- , AlF_4^- , AlCl_4^- , $\text{AlF}_3\text{O}_3\text{SCF}_3^-$, AsCl_6^- , SbCl_6^- , SbF_6^- , PF_6^- , BF_4^- , ClO_4^- , HSO_4^- , carboxylates, acetates, acetylacetonates, carbonates, aluminates, borates, hydrocarbyl and halogenated hydrocarbyl selected from hydride, linear and branched $\text{C}_1\text{-C}_5$ alkyl, linear and branched $\text{C}_1\text{-C}_5$ haloalkyl, $\text{C}_5\text{-C}_{10}$ cycloalkyl, $\text{C}_5\text{-C}_{10}$ cyclohaloalkyl, $\text{C}_6\text{-C}_{10}$

aryl, and C₆-C₁₀ haloaryl, wherein said cyclohaloalkyl and haloaryl groups are monosubstituted or multisubstituted with a halogen group selected from bromine, chlorine, fluorine, and iodine.

43. (Original) The reactant composition of claim 33 wherein said procatalyst is selected from a compound of group consisting of bis(triisopropylphosphine)(hydrido)palladium chloride, bis(triisopropylphosphine)(hydrido)palladium nitrate, bis(triisopropylphosphine)(hydrido)palladium triflate, (allyl)palladium(triisopropylphosphine) chloride, (methallyl)palladium(triisopropylphosphine) chloride, (crotyl)palladium(triisopropylphosphine) chloride, (allyl)palladium(triisopropylphosphine) trifluoroacetate, (1,1-dimethyl- π -allyl(triisopropylphosphine)palladium trifluoroacetate, (2-chloroallyl)palladium(triisopropylphosphine) trifluoroacetate, (allyl)palladium(triisopropylphosphine) triflate, (crotyl)palladium(triisopropylphosphine) triflate, (methallyl)palladium(triisopropylphosphine) triflate, (allyl)palladium(triisopropylphosphine) triflimide, (methallyl)palladium(triisopropylphosphine) triflimide, bis(tricyclohexylphosphine)(hydrido)palladium chloride, bis(tricyclohexylphosphine)(hydrido)palladium nitrate, bis(tricyclohexylphosphine)(hydrido)palladium trifluoroacetate, bis(tricyclohexylphosphine)(hydrido)palladium formate, (allyl)palladium(tricyclohexylphosphine) chloride, (methallyl)palladium(tricyclohexylphosphine) chloride, (allyl)palladium(tricyclohexylphosphine) trifluoroacetate, (allyl)palladium(tricyclohexylphosphine) triflate, (methallyl)palladium(tricyclohexylphosphine) triflate, (crotyl)palladium(tricyclohexylphosphine) triflate, (methallyl)palladium(tricyclohexylphosphine) triflimide, (allyl)palladium(tricyclohexylphosphine) *p*-tolylsulfonate, (allyl)palladium(tricyclohexylphosphine) triflimide, (allyl)palladium(tricyclopentylphosphine) chloride, (methallyl)palladium(tricyclopentylphosphine) chloride, (allyl)palladium(tricyclopentylphosphine) triflate, (crotyl)palladium(tricyclopentylphosphine) triflate, (methallyl)palladium(tricyclopentylphosphine) triflate, (allyl)palladium(tricyclopentylphosphine) triflimide,

(methallyl)palladium(tricyclopentylphosphine)triflimide,
 (allyl)palladium(triisopropylphosphine)C₆F₅,
 (allyl)palladium(tricyclohexylphosphine)C₆F₅, and
 [(allyl)palladium(HOCH₃)(triisopropylphosphine)][B(O₂-3,4,5,6-Cl₄C₆)₂].

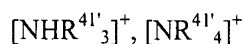
44. (Currently Amended) A reactant composition comprising a polycycloolefin monomer wherein said polycycloolefin monomer comprises a multifunctional polycycloolefin containing at least two polymerizable norbornene-type moieties and an activator salt of the formula:



wherein C represents a proton, an alkali metal cation, an alkaline earth metal cation, a transition metal cation or an organic group containing cation, L'' is a labile neutral electron donor ligand, and WCA is a weakly coordinating counteranion, z is an integer from 0 to 8, and b and d represent the number of times the cation complex and weakly coordinating counteranion complex, respectively, are taken to balance the electronic charge on the overall salt complex.

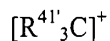
45. (Currently Amended) The composition of claim 44 wherein said ~~Group I element~~ alkali metal cation is selected from the group consisting of ~~a proton~~, lithium, sodium, and potassium; said ~~Group II~~ alkaline earth metal cation is selected from the group consisting of beryllium, magnesium, calcium, strontium, and barium; said transition metal cation is selected from the group consisting of zinc, silver, and thallium; and said organic group cation is selected from ammonium, phosphonium, carbonium and silylium cations.

46. (Original) The reactant composition of claim 45 wherein said ammonium cation is selected from a compound of the formulae:



wherein R^{41'} independently represents a hydrocarbyl, silylhydrocarbyl, or perfluorocarbyl group, each containing 1 to 24 carbon atoms.

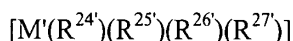
47. (Original) The reactant composition of claim 45 wherein said carbonium cation is selected from a compound of the formula:



wherein $R^{41'}$ independently represents a hydrocarbyl, silylhydrocarbyl, or perfluorocarbyl group, each containing 1 to 24 carbon atoms.

48. (Original) The reactant composition of claim 44 wherein said weakly coordinating counteranion is selected from the group consisting of borates, aluminates, boratobenzene anions, carborane anions, and halocarborane anions.

49. (Original) The reactant composition of claim 48 wherein the weakly coordinating anion is a borate or aluminate of the formula:



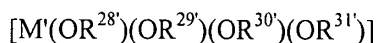
wherein M' is boron or aluminum and $R^{24'}$, $R^{25'}$, $R^{26'}$, and $R^{27'}$ independently represent fluorine, linear and branched C_1 - C_{10} alkyl, linear and branched C_1 - C_{10} alkoxy, linear and branched C_3 - C_5 haloalkenyl, linear and branched C_3 - C_{12} trialkylsiloxy, C_{18} - C_{36} triarylsiloxy, substituted and unsubstituted C_6 - C_{30} aryl, and substituted and unsubstituted C_6 - C_{30} aryloxy groups, wherein $R^{24'}$ to $R^{27'}$ can not simultaneously represent alkoxy or simultaneously represent aryloxy, and wherein said aryl and aryloxy groups when substituted are monosubstituted or multisubstituted and said substituents are independently selected from linear and branched C_1 - C_5 alkyl, linear and branched C_1 - C_5 haloalkyl, linear and branched C_1 - C_5 alkoxy, linear and branched C_1 - C_5 haloalkoxy, linear and branched C_1 - C_{12} trialkylsilyl, C_6 - C_{18} triarylsilyl, and halogen selected from chlorine, bromine, and fluorine.

50. (Original) The reactant composition of claim 49 wherein said borate is selected from the group consisting of tetrakis(pentafluorophenyl)borate, tetrakis(3,5-

bis(trifluoromethyl)phenyl)borate, tetrakis(2-fluorophenyl)borate, tetrakis(3-fluorophenyl)borate, tetrakis(4-fluorophenyl)borate, tetrakis(3,5-difluorophenyl)borate, tetrakis(2,3,4,5-tetrafluorophenyl)borate, tetrakis(3,4,5,6-tetrafluorophenyl)borate, tetrakis(3,4,5-trifluorophenyl)borate, methyltris(perfluorophenyl)borate, ethyltris(perfluorophenyl)borate, phenyltris(perfluorophenyl)borate, tetrakis(1,2,2-trifluoroethylenyl)borate, tetrakis(4-tri-*i*-propylsilyltetrafluorophenyl)borate, tetrakis(4-dimethyl-*tert*-butylsilyltetrafluorophenyl)borate, (triphenylsiloxy)tris(pentafluorophenyl)borate, (octyloxy)tris(pentafluorophenyl)borate, tetrakis[3,5-bis[1-methoxy-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]phenyl]borate, tetrakis[3-[1-methoxy-2,2,2-trifluoro-1-(trifluoromethyl)ethyl]-5-(trifluoromethyl)phenyl]borate, and tetrakis[3-[2,2,2-trifluoro-1-(2,2,2-trifluoroethoxy)-1-(trifluoromethyl)ethyl]-5-(trifluoromethyl)phenyl]borate.

51. (Original) The reactant composition of claim 49 wherein said aluminate is selected from the group consisting of tetrakis(pentafluorophenyl)aluminate, tris(nonafluorobiphenyl)fluoroaluminate, (octyloxy)tris(pentafluorophenyl)aluminate, tetrakis(3,5-bis(trifluoromethyl)phenyl)aluminate, and methyltris(pentafluorophenyl)aluminate.

52. (Original) The reactant composition of claim 48 wherein the weakly coordinating anion is a borate or aluminate of the formula:



M' is boron or aluminum, R²⁸, R²⁹, R³⁰, and R³¹ independently represent linear and branched C₁-C₁₀ alkyl, linear and branched C₁-C₁₀ haloalkyl, C₂-C₁₀ haloalkenyl, substituted and unsubstituted C₆-C₃₀ aryl, and substituted and unsubstituted C₇-C₃₀ aralkyl groups, subject to the proviso that at least three of R²⁸ to R³¹ must contain a halogen containing substituent; OR²⁸ and OR²⁹ can be taken together to form a chelating substituent represented by -O-R³²-O-, wherein the oxygen atoms are bonded to M' and R³² is a divalent radical selected from substituted and unsubstituted C₆-C₃₀ aryl and substituted and unsubstituted C₇-C₃₀ aralkyl, wherein said aryl and aralkyl groups when substituted are monosubstituted or multisubstituted and said substituents are

independently selected from linear and branched C₁-C₅ alkyl, linear and branched C₁-C₅ haloalkyl, linear and branched C₁-C₅ alkoxy, linear and branched C₁-C₅ haloalkoxy, linear and branched C₁-C₁₂ trialkylsilyl, C₆-C₁₈ triarylsilyl, and halogen selected from chlorine, bromine, and fluorine.

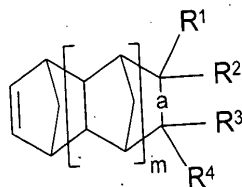
53. (Original) The reactant composition of claim 52 wherein said borate is selected from the group consisting of [B(O₂C₆F₄)₂]⁻, [B(OC(CF₃)₂(CH₃))₄]⁻, [B(OC(CF₃)₂H)₄]⁻, [B(OC(CF₃)(CH₃)H)₄]⁻, and [B(OCH₂(CF₃))₄]⁻.

54. (Original) The reactant composition of claim 52 wherein said aluminate is selected from the group consisting of, [Al(OC(CF₃)₂Ph)₄]⁻, [Al(OC(CF₃)₂C₆H₄-4-CH₃)₄]⁻, [Al(OC(CF₃)₃)₄]⁻, [Al(OC(CF₃)(CH₃)H)₄]⁻, [Al(OC(CF₃)₂H)₄]⁻, [Al(OC(CF₃)₂C₆H₄-4-*i*-Pr)₄]⁻, [Al(OC(CF₃)₂C₆H₄-4-*t*-butyl)₄]⁻, [Al(OC(CF₃)₂C₆H₄-4-SiMe₃)₄]⁻, [Al(OC(CF₃)₂C₆H₄-4-Si-*i*-Pr₃)₄]⁻, [Al(OC(CF₃)₂C₆H₂-2,6-(CF₃)₂-4-Si-*i*-Pr₃)₄]⁻, [Al(OC(CF₃)₂C₆H₃-3,5-(CF₃)₂)₄]⁻, [Al(OC(CF₃)₂C₆H₂-2,4,6-(CF₃)₃)₄]⁻, and [Al(OC(CF₃)₂C₆F₅)₄]⁻.

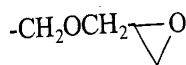
55. (Original) The reactant composition of claim 44 wherein said activator salt is selected from the group consisting of lithium tetrakis(pentafluorophenyl)borate, sodium tetrakis(pentafluorophenyl)borate, lithium(diethyl ether) tetrakis(pentafluorophenyl)borate, lithium(diethyl ether)_{2.5} tetrakis(pentafluorophenyl)borate, lithium tris(isopropanol) tetrakis(pentafluorophenyl)borate, lithium tetrakis(methanol) tetrakis(pentafluorophenyl)borate, silver tetrakis(pentafluorophenyl)borate, tris(toluene)silver tetrakis(pentafluorophenyl)borate, trityl tetrakis(pentafluorophenyl)borate, N,N-dimethylanilinium tetrakis(pentafluorophenyl)borate, lithium tetrakis(3,5-bis(trifluoromethyl)phenyl)borate, sodium tetrakis(3,5-bis(trifluoromethyl)phenyl)borate, N,N-dimethylanilinium tetrakis[3,5-bis(trifluoromethyl)phenyl]borate, silver tetrakis[3,5-bis(trifluoromethyl)phenyl]borate, tris(toluene)silver tetrakis[3,5-bis(trifluoromethyl)phenyl]borate,

thallium tetrakis[3,5-bis(trifluoromethyl)phenyl]borate, $\text{LiB}(\text{O}_2\text{C}_6\text{F}_4)_2$, $\text{LiB}(\text{OC}(\text{CH}_3)(\text{CF}_3)_2)_4$, $\text{LiAl}(\text{OC}(\text{CF}_3)_2\text{Ph})_4$, $\text{LiAl}(\text{OC}(\text{CF}_3)_2\text{C}_6\text{H}_4\text{CH}_3)_4$, $\text{LiAl}(\text{OC}(\text{CH}_3)(\text{CF}_3)_2)_4$, $\text{LiAl}(\text{OC}(\text{CF}_3)_3)_4$, $\text{LiAl}(\text{OC}(\text{CF}_3)_2\text{C}_6\text{H}_4\text{-4-}i\text{-Pr})_4$, $\text{LiAl}(\text{OC}(\text{CF}_3)_2\text{C}_6\text{H}_3\text{-3,5-}(\text{CF}_3)_2)_4$, $\text{LiAl}(\text{OC}(\text{CF}_3)_2\text{C}_6\text{H}_2\text{-2,4,6-}(\text{CF}_3)_3)_4$, and $\text{LiAl}(\text{OC}(\text{CF}_3)_2\text{C}_6\text{F}_5)_4$.

56. (Previously Amended) The reactant composition claim 33, wherein said polycycloolefin comprises a monomer selected from a compound of the formula:

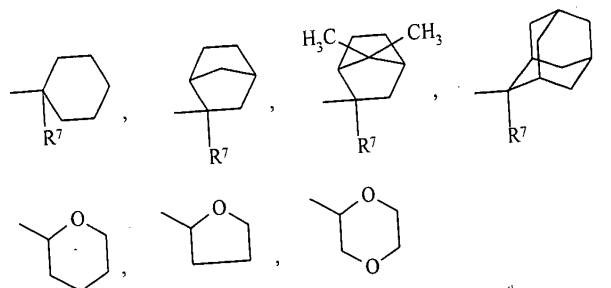


wherein "a" represents a single or double bond; m is an integer from 0 to 5; when "a" is a double bond one of R^1 , R^2 and one of R^3 , R^4 is not present; and R^1 to R^4 independently represent hydrogen, substituted and unsubstituted linear and branched $\text{C}_1\text{-C}_{10}$ alkyl, linear and branched $\text{C}_1\text{-C}_{10}$ haloalkyl, substituted and unsubstituted linear and branched $\text{C}_2\text{-C}_{10}$ alkenyl, linear and branched $\text{C}_2\text{-C}_{10}$ haloalkenyl, substituted and unsubstituted linear and branched $\text{C}_2\text{-C}_{10}$ alkynyl, substituted and unsubstituted $\text{C}_4\text{-C}_{12}$ cycloalkyl, substituted and unsubstituted $\text{C}_4\text{-C}_{12}$ halocycloalkyl, substituted and unsubstituted $\text{C}_4\text{-C}_{12}$ cycloalkenyl, substituted and unsubstituted $\text{C}_6\text{-C}_{12}$ aryl, substituted and unsubstituted $\text{C}_6\text{-C}_{12}$ haloaryl and substituted and unsubstituted $\text{C}_7\text{-C}_{24}$ aralkyl, R^1 and R^2 or R^3 and R^4 can be taken together to represent a $\text{C}_1\text{-C}_{10}$ alkylidenyl group, $-(\text{CH}_2)_n\text{C}(\text{O})\text{NH}_2$, $-(\text{CH}_2)_n\text{C}(\text{O})\text{Cl}$, $-(\text{CH}_2)_n\text{C}(\text{O})\text{OR}^5$, $-(\text{CH}_2)_n\text{-OR}^5$, $-(\text{CH}_2)_n\text{-OC}(\text{O})\text{R}^5$, $-(\text{CH}_2)_n\text{-C}(\text{O})\text{R}^5$, $-(\text{CH}_2)_n\text{-OC}(\text{O})\text{OR}^5$, $-(\text{CH}_2)_n\text{SiR}^5$, $-(\text{CH}_2)_n\text{Si}(\text{OR}^5)_3$, $-(\text{CH}_2)_n\text{C}(\text{O})\text{OR}^6$, and the group:



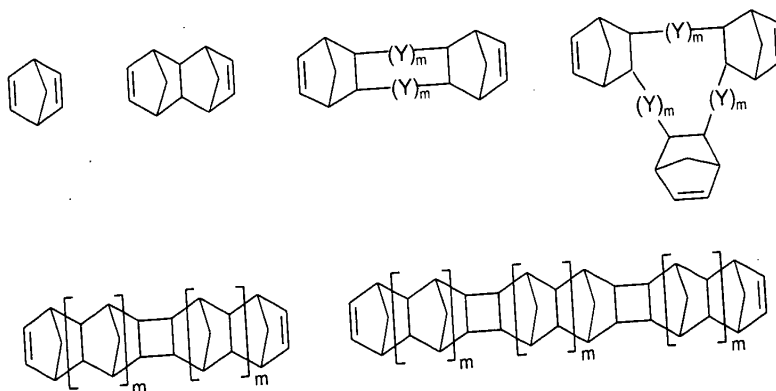
wherein n independently represents an integer from 0 to 10 and R^5 independently represents hydrogen, linear and branched $\text{C}_1\text{-C}_{10}$ alkyl, linear and branched, $\text{C}_2\text{-C}_{10}$ alkenyl, linear and

branched C₂-C₁₀ alkynyl, C₅-C₁₂ cycloalkyl, C₆-C₁₄ aryl, and C₇-C₂₄ aralkyl; R⁶ represents a radical selected from -C(CH₃)₃, -Si(CH₃)₃, -CH(R⁷)OCH₂CH₃, -CH(R⁷)OC(CH₃)₃, dicyclopropylmethyl, dimethylcyclopropylmethyl, or the following cyclic groups:



wherein R⁷ represents hydrogen or a linear or branched (C₁-C₅) alkyl group; R¹ and R⁴ together with the two ring carbon atoms to which they are attached can represent a substituted or unsubstituted cycloaliphatic group containing 4 to 30 ring carbon atoms, a substituted or unsubstituted aryl group containing 6 to 18 ring carbon atoms and combinations thereof; R¹ and R⁴ can be taken together to form the divalent bridging group, -C(O)-Q-(O)C-, which when taken together with the two ring carbon atoms to which they are attached form a pentacyclic ring, wherein Q represents an oxygen atom or the group N(R⁸), wherein R⁸ is selected from hydrogen, halogen, linear and branched C₁-C₁₀ alkyl, and C₆-C₁₈ aryl.

57. (Original) The reactant composition of claim 55 wherein said multifunctional polycycloolefin monomer includes a monomer selected from a compound of the formula:



and mixtures thereof, wherein Y represents a $(-CH_2-)$ group and m independently represents an integer from 0 to 5, and when m is 0, Y represents a single bond.

58. (Original) The reactant composition of claim or 56 wherein said multifunctional polycycloolefin monomer is present in a range from 0.25 to 99.75 mole % of the total polycycloolefin monomer composition.

59. (Previously Amended) The reactant composition of claim 33, wherein said composition further comprises a rate moderator selected from the group consisting of water, tetrahydrofuran, 2-methyltetrahydrofuran, diethyl ether, methyl-*tert*-butyl ether, dimethoxyethane, diglyme, trimethylphosphine, triethylphosphine, tributylphosphine, tri(ortho-tolyl)phosphine, tri-*tert*-butylphosphine, tricyclopentylphosphine, tricyclohexylphosphine, triisopropylphosphine, trioctylphosphine, triphenylphosphine, tri(pentafluorophenyl)phosphine, methyldiphenylphosphine, dimethylphenylphosphine, trimethylphosphite, triethylphosphite, triisopropylphosphite, ethyl diphenylphosphinite, tributylphosphite, triphenylphosphite, diethylphenylphosphonite, and tribenzylphosphine, 2-cyclohexenone, triphenylphosphine oxide, and mixtures thereof.